



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,746	04/12/2002	Kathleen R. McKeown	A32312-PCT USA	4045
21003	7590	03/02/2006	EXAMINER AZAD, ABUL K	
BAKER & BOTTS 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			ART UNIT 2654	PAPER NUMBER

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Amendment

1. This action is in response to the communication filed on December 23, 2005.
2. Claims 1-37 are pending in this action.
3. The applicant's arguments with respect to claims 1-37 have been fully considered but they are not deemed to be persuasive. For examiner's response to the applicant's arguments or comments, see the detailed discussion in the Response to the Arguments section.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-32 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi (US 5,077,668) in view of Kupiec et al. (US 5,778,397).

As per claim 1, Doi teaches, "a system for generating a summary of an input document comprising":

"an extraction module, the extraction module receiving the input document and extracting at least one sentence related to a focus of the document" (col. 2, lines 55-59);

"a summary sentence generation module operatively coupled to the extraction module" (col. 2, lines 55-59);

Art Unit: 2654

“a grammatical parser operatively coupled to the generation module for parsing the extracted sentences into components in a grammatical representation” (col. 5, lines 5-24);

“a combined lexicon operatively coupled to the generation module” (col. 5, lines 20-35).

Doi teaches a hint word dictionary are operatively coupled to the generation module (Fig. 5, element 3). Doi does not explicitly teach, “a corpus of human generated summaries operatively coupled to the generation module”. However, Kupiec teaches, “a corpus of human generated summaries operatively coupled to the generation module” (col. 2, lines 58-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use Kupiec teaching in the invention of Doi because Kupiec teaches his invention generating a summary automatically from a natural language text subjective to the human generated summary (col. 1, lines 7-12).

As per claim 2, Doi teaches, “wherein the generation module further comprises a sentence reduction module” (col. 3, lines 52-57).

As per claim 3, Doi does not explicitly teach, “wherein the sentence reduction module is cooperatively engaged with the corpus and performs probabilistic importance processing on the components of the grammatical representation in accordance with the corpus”. However, Kupiec teaches, “wherein the sentence reduction module is cooperatively engaged with the corpus and performs probabilistic importance processing on the components of the grammatical representation in accordance with the corpus” (col. 1, line 57 to col. 2, line 17). Therefore, it would have been obvious to

Art Unit: 2654

one of ordinary skill in the art at the time of the invention to have incorporated Kupiec's probabilistic processing into doi, because Kupiec teaches that the probabilistic model ensues more important parts of the sentences to be chosen for the summary.

As per claim 4, Doi teaches, "wherein the sentence reduction module is cooperatively engaged with the combined lexicon and performs context importance processing on the components of the grammatical representation" (col. 3, lines 46-57).

As per claim 5, Doi teaches, "wherein the context importance processing includes establishing a plurality of lexical links of a least one type for the components and generating a context importance score based on the type and number of links associated with the components" (col. 4, lines 23-44).

As per claim 6, Doi teaches, "wherein the sentence reduction module farther computes the relative importance of the components based on linguistic knowledge stored in the combined lexicon" (col. 4, lines 23-33).

As per claim 7, Doi teaches, "wherein the generation module further comprises a sentence combination module" (col. 6, lines 55-59).

As per claim 8, Doi teaches, "wherein the sentence combination module is operatively coupled to the corpus and wherein the sentence combination module: identifies at least one sentence combination operation; establishes at least one rule for applying the sentence combination operation; and applies the at least one rule to combine at least two extracted Sentences" (Fig. 9).

As per claim 9, Doi teaches, "wherein the at least one sentence combination operation is selected from the group consisting of add descriptions, aggregations,

Art Unit: 2654

substitute incoherent phrases, substitute phrases with more general or more specific information, and mixed operations” (col. 5, lines 5-24).

As per claim 10, Doi teaches, “wherein the at least one rule to combine extracted sentences includes replacing a partial name phrase with a full name phrase” (col. 5, lines 25-42) .

As per claim 11, Doi teaches, “wherein the at least one rule to combine extracted sentences includes determining if two sentences having a common subject are proximate and whether at least one sentence is marked for reduction then removing the subject of the second sentence and combining with the first sentence using the connective “and ”” (col. 4, lines 45-65).

As per claim 32, Doi teaches, “a method of identifying correspondence between phrases in a sentence in a summary and phrases in the original document corresponding to the summary” comprising:

“establishing a plurality of heuristic rules for identifying a cut and paste summarization operation” (col. 4, lines 23-65).

Doi does not explicitly teach, “building a probability model based on the heuristic rules and calculate the best solution of the probability model to map a correspondence between the summary phrases and the original phrases”. However, Kupiec teaches, “building a probability model based on the heuristic rules and calculate the best solution of the probability model to map a correspondence between the summary phrases and the original phrases” (col. 1, line 57 to col. 2, line 17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate

Art Unit: 2654

Kupiec's probabilistic processing into doi, because Kupiec teaches that the probabilistic model ensues more important parts of the sentences to be chosen for the summary

As per claims 12-31 and 35-37, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 1-11.

6. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi (US 5,077,668) in view of Kupiec et al. (US 5,778,397) as applied to claim 32 above, and further in view of well-known prior art.

As per claims 33 and 34, Doi and Kupiec do not teaches probability model is Hidden Markov model or Viterbi algorithm. Official Notice is taken on the well-known Hidden Markov model or Viterbi algorithm. It would have been obvious to one of ordinary skill in the art at the time of the invention to use probability model as Hidden Markov model or Viterbi algorithm because that would provide a easy calculation of probability using known method.

Response to Arguments

7. The applicant argues, "claim 1 is directed to a system for generating a summary of an input document. Claim 1 includes, *inter alia*, an extraction module receiving an input document and extracting at least one sentence related to a focus of the document. No such arrangement is disclosed in or suggested by Doi, either alone or in combination with Kupiec. While Doi is generally directed to a technique for generating an abstract of

Art Unit: 2654

a larger document, it does not disclose or suggest extracting at least one sentence related to a focus of the document, as claimed in claim 1”.

The examiner disagrees with the applicant's above assertion because Doi teaches extracting sentences of the document in which any one of the listed hint words is found by the search (see abstract, col. 2, lines 48-62), in other word focus of the document is determined by listed hint words. The applicant does not recite in the claims, which particular way he is determined a focus of the document.

During patent examination, the claims are given the broadest reasonable interpretation consistent with the specification. See *In re Morris*, 127 F.3d 1048, 44 USPQ2d 1023 (Fed. Cir. 1997). See MPEP § 2111-§ 2116.01 for case law pertinent to claim analysis.

8. The applicant further argues, “neither Doi nor Kupiec disclose or suggest mapping a correspondence between the summary phrases and the original phrases as disclosed in claim 32”.

In response to above argument the examiner notes that Doi teaches, “mapping a correspondence between the summary phrases and the original phrases” (see col. 1, line 65 to col. 2, line 5, particularly reads on “given a feature set and matched training corpus the computer system determines two kinds of probabilities: the probability of observing a value of a particular feature in a sentence included in the summary and the probability of the feature taking each of the possible values”).

Art Unit: 2654

9. The applicant argues that as per claim 35, neither Doi nor Kupiec discloses or suggests a sentence combination subcorpus or a sentence reduction subcorpus, but instead merely juxtapose extracted sentences, or used to generate future probabilities.

The examiner disagrees with the applicant's above assertion because Doi teaches, sentence combination subcorpus or a sentence reduction subcorpus at col. 6, line 40 to col. 7, line 25. Here l th sentence is combined and modified or reduced to j th sentence to create Abstract.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2654

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(571) 272-7599**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richemond Dorvil**, can be reached at **(571) 272-7602**.

Any response to this action should be mailed to:

Commissioner for Patents

P.O. Box 1450


Alexandria, VA 22313-1450

Or faxed to: **(571) 273-8300**.

Hand-delivered responses should be brought to **401 Dulany Street, Alexandria, VA-22314** (Customer Service Window).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 26, 2006



Abul K. Azad
Primary Examiner
Art Unit 2654